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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,075	02/15/2002	Bong-gi Kim	1293.1318	8497

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EXAMINER

AGUSTIN, PETER VINCENT

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/076,075	Applicant(s) KIM, BONG-GI	
	Examiner Peter Vincent Agustin	Art Unit 2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first and second paragraphs of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2-7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 2 describes that the hologram is formed to diffract the first light beam into a relatively more +1-order diffracted light beam and relatively less residual light, and diffracting the second light beam into a relatively more zero-order diffracted light beam and relatively less residual light. Claim 6 further limits that the hologram is formed such that the +1-order diffracted light beam is at least 70% as much as the first light beam; and claim 7 further limits that the hologram is formed such that the zero-order diffracted light beam is at least 70% as much as the second light beam. However, the specification fails to describe how one skilled in the art would make a hologram capable of achieving these functions.

3. Claims 5, 13 & 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claim 5 recites the limitation "the coating" on lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "the second light beam" on lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim 14 recites the limitation "the first light beam" on lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (US 6,392,977) in view of Ono et al. (US 5,659,531).

In regard to claim 1, Ando et al. disclose an optical pickup apparatus (figure 1) comprising: a first light source (3a) to generate a first light beam (L1); a second light source (L2) to generate a second light beam (3b) whose optical axis is parallel to the optical axis of the first light beam (column 4, lines 62-65), the second light source being disposed optically farther from a recording medium than the first light source; a photodetector (15) to receive the first light beam and the second light beam which are emitted from the first and second light sources, respectively, and which are reflected from the recording medium and performing photoelectric conversion; an objective lens (9) to focus the first light beam and second light beam on the recording medium, the objective lens being disposed on an optical path between the first and

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second light sources and the recording medium; and a beam splitter (7) disposed on an optical path between the objective lens and the photodetector, the beam splitter having a first surface to reflect the first light beam and the second light beam toward the objective lens and simultaneously transmitting the first light beam and the second light beam. Furthermore, Ando et al. disclose a holographic optical element (8) that is formed to compensate for a deviation between optical axes of the first and second light beams transmitted through the first surface of the beam splitter. However, Ando et al. do not disclose that the hologram is formed on a second surface of the beam splitter.

Ono et al. disclose a beam splitter (figure 11A, element 216) having a surface on which a hologram is formed. It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to have added the hologram surface of Ono et al. to the beam splitter of Ando et al., the motivation being to provide a compact, light and low cost optical head device (see last three lines of abstract).

In regard to claim 2, Ando et al. disclose that the hologram is formed to diffract the first light beam into a relatively more +1-order diffracted light beam and relatively less residual light, and diffracting the second light beam into a relatively more zero-order diffracted light beam and relatively less residual light (column 6, lines 20-29).

In regard to claim 3, Ando et al. disclose that the first surface is set such that the first light beam and the second light beam are incident thereon at an angle of 45° (column 6, line 1).

In regard to claim 4, Ando et al. disclose a coating (7a) formed on the first surface so that approximately 50% of the first light beam is reflected and approximately 50% thereof is transmitted (column 6, lines 9-12).

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In regard to claim 5, Ando et al. disclose that the coating is formed on the first surface so that approximately 50% of the second light beam is reflected and approximately 50% thereof is transmitted (column 6, lines 9-12).

In regard to claim 6, Ando et al. disclose that the hologram is formed such that the +1-order diffracted light beam is at least 70% as much as the first light beam (column 6, lines 20-29).

In regard to claim 7, Ando et al. disclose that the hologram is formed such that the zero-order diffracted light beam is at least 70% as much as the second light beam (column 6, lines 20-29).

In regard to claim 8, Ando et al. disclose a collimating lens (6) on an optical path between the beam splitter and the objective lens.

In regard to claim 9, Ando et al. disclose a concave lens (14) on an optical path between the beam splitter and the photodetector. Note that element 14 is a multiple lens, which is known in the art as comprising a concave lens.

In regard to claims 10-17, these claims have limitations that are similar to or inherent from those of claims 1-7; thus, they are rejected using the same rationale applied against claims 1-7 above.

6. Claims 1, 8, 9, 15 & 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art in view of Ono et al.

In regard to claim 1, the applicant's admitted prior art discloses an optical pickup apparatus (figure 1) comprising: a first light source (13) to generate a first light beam; a second light source (15) to generate a second light beam whose optical axis is parallel to the optical axis

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of the first light beam, the second light source being disposed optically farther from a recording medium (25) than the first light source; a photodetector (29) to receive the first light beam and the second light beam which are emitted from the first and second light sources, respectively, and which are reflected from the recording medium and performing photoelectric conversion; an objective lens (23) to focus the first light beam and second light beam on the recording medium, the objective lens being disposed on an optical path between the first and second light sources and the recording medium; and a beam splitter (19) disposed on an optical path between the objective lens and the photodetector, the beam splitter having a first surface to reflect the first light beam and the second light beam toward the objective lens and simultaneously transmitting the first light beam and the second light beam. Furthermore, the applicant's admitted prior art discloses a holographic optical element (20) that is formed to compensate for a deviation between optical axes of the first and second light beams transmitted through the first surface of the beam splitter (see paragraph 8). However, the applicant's admitted prior art does not disclose that the hologram is formed on a second surface of the beam splitter.

Ono et al. disclose a beam splitter (figure 11A, element 216) having a surface on which a hologram is formed. It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to have added the hologram surface of Ono et al. to the beam splitter of the applicant's admitted prior art, the motivation being to provide a compact, light and low cost optical head device (see last three lines of abstract).

In regard to claim 8, the applicant's admitted prior art discloses a collimating lens (21) on an optical path between the beam splitter and the objective lens.

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In regard to claim 9, the applicant's admitted prior art discloses a concave lens (27) on an optical path between the beam splitter and the photodetector.

In regard to claims 15 & 16, these claims have limitations that are similar to those of claim 1; thus, they are rejected using the same rationale as applied against claim 1 above.

Response to Arguments

7. Applicant's arguments, see pages 6-7 of the response filed August 26, 2004, with respect to the rejection(s) of claim(s) 10, 11, 13 & 14 under Kim et al. (US 6,337,841) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Ando et al. (US 6,392,977), Ono et al. (US 5,659,531), and the applicant's admitted prior art.

8. Regarding the rejection of claims 1-9, 12, & 15-17, the examiner recognizes that the primary citation to Kim et al. does not qualify as prior art under 35 U.S.C. 103(c) because of common ownership. Therefore, the rejections under 103(a) have been withdrawn.

Conclusion

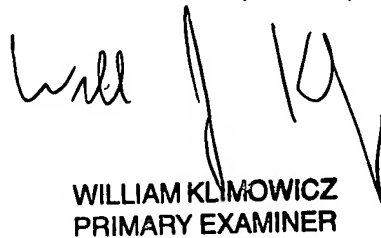
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Vincent Agustin whose telephone number is 703-305-8980. The examiner can normally be reached on Monday-Friday 9:30-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Thi Nguyen can be reached on 703-305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Peter Vincent Agustin
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WILLIAM KLIMOWICZ
PRIMARY EXAMINER